SCIENCE AND INVENTION

ORDINARY PRINT TO BE READABLE
BY THE BLIND

HV1701
O

HV1701
O

M.C. MIGEL LIBRARY
AMERICAN PRINTING
HOUSE FOR THE BLIND

41360.MIGEL

[illegible] INDUSTRIES
Newark, 8, N. J. - Los Angeles 25, Calif.
Toronto 6, Ontario
Made in U.S.A.

M.C. MIGEL LIBRARY
AMERICAN PRINTING
HOUSE FOR THE BLIND

41360-MIGEL

C.1

HV1701
O

copy one

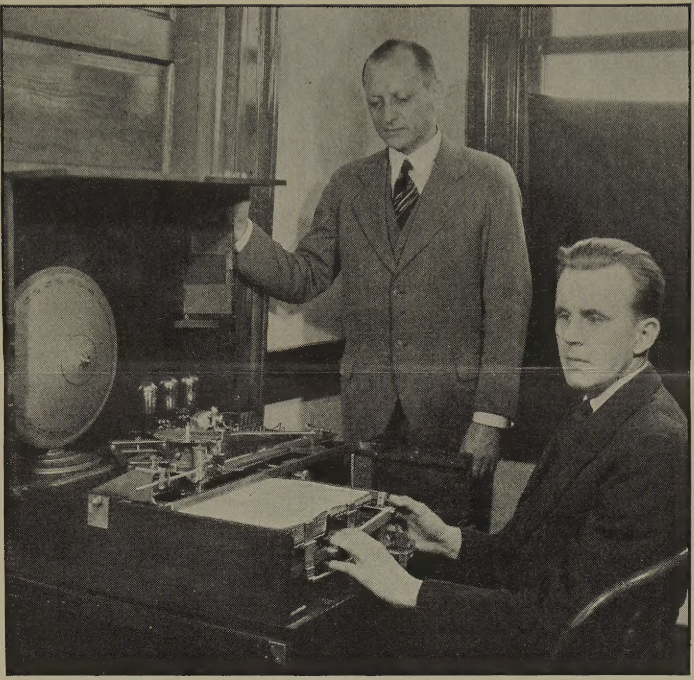
SCIENCE · AND · INVENTION

ORDINARY PRINT TO BE READABLE BY THE BLIND

THE BLIND HAVE HITHERTO READ by touch, and specially made books, with letters formed of groups of raised points, have been required for this. By a new invention, named the "visagraph," it is said to be possible to identify the letters of the alphabet by sound after proper training, and the sounds are produced by an electrical device in conjunction with an ordinary book. If this machine, the invention of Robert E. Naumburg, of Winchester, Massachusetts, with the assistance of Toivo Laminan, a blind sophomore of Tufts College, ever reaches the commercial stage, the whole field of printed books is expected to be opened to the blind. Says the Boston *Globe*, in a description of Mr. Naumburg's machine:

"The operation of the device is simple. The book, in ordinary ink print, is placed in a mechanical holder, which keeps it rigid and balanced in its position, no matter at what point it is opened.

"By a specially designed apparatus a light-ray about 1-1000th of an inch in diameter is projected down upon the printed page. The apparatus is so arranged that the ray can be moved along each printed line at will.



THE "VISAGRAPH"

Robert E. Naumburg, inventor of the new device for enabling the blind to read ordinary books, is shown giving a lesson to Toivo Laminan, blind college student.

"The selenium cell is the main feature of the device. When the light-ray is on the white paper, an electric current flows through the apparatus, 'broadcasting' a continuous buzz through an ordinary radio loud-speaker. One tube makes enough noise in headphones, two tubes, with the speaker.

"When the light-ray strikes the black of the type the current ceases. It is a property of selenium, an element akin to sulfur, that it acts as a conductor of electricity when exposed to light, and as an insulator when it is dark.

"Upon this needle-ray device depends a pantograph, a variety of the device familiar to artists and architects. This one works in the ratio of four to one. That is, distances traveled by the point of light are magnified four times by the steel rod on the other end of the pantograph.

"Underneath the upright rod on the magnified end of the pantograph are several aluminum strips, set at different levels with slight indentations between them. These strips are the ground on which the rod 'writes.' Take the capital letter 'H,' for example.

"The operator begins at the left-hand side of his little rack. He draws the pantograph down over the strips. As he does that, the light ray on the other end of the pantograph traverses the black line of the left leg of the letter. There is no sound, so the operator knows that there is part of a letter.

"Then he moves his rod slightly to the right and draws it straight down, the width of the rack. There is a buzz all the way down, except for an instant of silence in the middle, where the light point strikes the cross bar of the letter. No letter but 'H' is like that, so he recognizes it at once and goes on the next.

"The operator 'reads' the next letter in the same way. It requires practise, and it requires that the operator knows the shape of the letters. There are several short cuts involved, by which a person may identify a letter without tracing it all the way. That requires more study of the shape of letters."

This invention seems thus to offer a means of transferring to the ears of a blind person one of the most valuable functions of normal eyes. At present not one book in 1,000, according to Mr. Naumburg, is written either in Braille or in raised letters. This invention makes it possible for a blind person to read for himself thousands upon thousands of books, papers, magazines, and other printed things, which have before been unavailable to him without the assistance of a second person. We read further:

"The announcement of this device does not mean that this happy result is to come about to-morrow. The making of this machine has taken a long time, and has been rather costly. Mr. Naumburg says that it is in no sense a commercial invention, altho he has patented it.

"A year ago last November he went with Mrs. Naumburg to a meeting which was held in the interests of the blind. He became interested, and he saw the desirability of some such machine as he has made. Then he went to work on it.

"Last June it had progressed so far that he called upon Laminan for assistance, and the two have spent about three afternoons a week on it ever since.

"This afternoon Laminan sat before the visagraph, which held a book unfamiliar to him. He read accurately a line of type which he said he had never seen before. It contained the word 'chores,' which was a new one on him, yet he picked it out. He did not read it rapidly, but he was never at a loss. He says that he reads more rapidly now than he could a month ago.

"The next step in the development of the visagraph is to be experimental. Tests will be made at the Perkins Institute to determine whether children learn its operation more rapidly than adults.

"Naumburg has a crude embodiment of the same principle, a 'bridge' with huge letters on it in black rubber, which the students can use to learn the shapes of letters. With this bridge, the blind pupil traces the aluminum surface with a needle on a wire, getting the buzz until he strikes the black letters.

"There is also a possibility that this visagraph may be adapted to the use of those who are also deaf. For the deaf and blind person, a vibrating disk to be held under the finger may be substituted for the audible signals of the radio. A rough working model of this variation is also at Mr. Naumburg's home."

Reprinted from The Literary Digest, June 23, 1928

Bro-Dart INDUSTRIES
Newark,8, N. J. - Los Angeles 25, Calif
Toronto 6, Ontario
Made in U.S.A.